

What is claimed is:

1. A PWM (pulse width modulation) control circuit for generating a PWM signal, comprising:
 - a counter for incrementing or decrementing a count value in accordance with a given operation clock;
 - an edge-point value setting register for storing an edge-point value which specifies a first edge-point at which the level of the PWM signal varies;
 - a PWM output circuit for varying the level of the PWM signal at said first edge-point specified by said edge-point value, based on said count value from said counter and said edge-point value from said edge-point value setting register;
 - a delay value setting register provided on low order side of said edge-point value setting register, for storing a delay value of at least one bit which specifies a delay time of said first edge-point; and
 - a period value setting register for storing a period value which specifies a period of the PWM signal,
wherein said PWM output circuit delays said first edge-point by a period which is smaller than one-clock period of said operation clock, in accordance with said delay value stored in said delay value setting register.

2. The PWM control circuit as defined in claim 1,

wherein said delay value setting register stores one-bit delay value; and

wherein said PWM output circuit delays said first edge-point by one-half clock period of said operation clock, in accordance with said one-bit delay value stored in said delay value setting register.

3. The PWM control circuit as defined in claim 2,

wherein said PWM output circuit comprises:

a comparator for comparing said count value from said counter with said edge-point value from said edge-point value setting register to generate a first signal having a signal level which varies at said first edge-point specified by said edge-point value;

a delay circuit for generating a second signal having a signal level which varies at a point delayed from said first edge-point by one-half clock period of said operation clock, based on said first signal and said operation clock; and

a multiplexer for selecting said first signal when said one-bit delay value stored in said delay value setting register is at a first level, and for selecting said second signal when said one-bit delay value is at a second level.

4. The PWM control circuit as defined in claim 1,

wherein said delay value setting register stores an M-bit delay value; and

wherein said PWM output circuit delays said first edge-point by any one of substantially $\frac{1}{2}^M$ clock period, substantially $2/2^M$ clock period, . . . and substantially $(2^M - 1)/2^M$ clock period of said operation clock, in accordance with said M-bit delay value stored in said delay value setting register.

5. The PWM control circuit as defined in claim 4,

wherein said PWM output circuit comprises:

a comparator for comparing said count value from said counter with said edge-point value from said edge-point value setting register to generate a first signal having a signal level which varies at said first edge-point specified by said edge-point value;

a delay circuit for generating a second signal having a signal level which varies at a point delayed from said first edge-point by substantially $1/2^M$ clock period of said operation clock, a third signal having a signal level which varies at a point delayed from said first edge-point by substantially $2/2^M$ clock period of said operation clock, . . . and a 2^M - th signal having a signal level which varies at a point delayed from said first edge-point by substantially $(2^M - 1)/2^M$ clock period of said operation clock, based on said first signal, said operation clock and a given delay element; and

a multiplexer for selecting any of said first through 2^M - th signals in accordance with said M-bit delay value stored in said delay value setting register.

6. A microcomputer for performing information processing, comprising:
a programmable timer including the PWM control circuit as defined in claim 1; and
a processor for executing instructions and for performing processing for storing said edge-point and delay values in said edge-point and delay value setting registers in said PWM control circuit.

7. A microcomputer for performing information processing, comprising
a programmable timer including the PWM control circuit as defined in claim 2; and
a processor for executing instructions and for performing processing for storing said edge-point and delay values in said edge-point and delay value setting registers in said PWM control circuit.

8. A microcomputer for performing information processing, comprising:

a programmable timer including the PWM control circuit as defined in claim 3; and
a processor for executing instructions and for performing processing for storing said
edge-point and delay values in said edge-point and delay value setting registers in said PWM
control circuit.

9. A microcomputer for performing information processing, comprising:
a programmable timer including the PWM control circuit as defined in claim 4; and
a processor for executing instructions and for performing processing for storing said
edge-point and delay values in said edge-point and delay value setting registers in said PWM
control circuit.

10. A microcomputer for performing information processing, comprising:
a programmable timer including the PWM control circuit as defined in claim 5; and
a processor for executing instructions and for performing processing for storing said
edge-point and delay values in said edge-point and delay value setting registers in said PWM
control circuit.

11. Electronic equipment comprising:
the microcomputer as defined in claim 6;
a source of input data to be processed by said microcomputer; and
an output device for outputting an analog signal by using the PWM signal generated by
said PWM control circuit included in said microcomputer.

12. Electronic equipment comprising:
the microcomputer as defined in claim 7;
a source of input data to be processed by said microcomputer; and

an output device for outputting an analog signal by using the PWM signal generated by said PWM control circuit included in said microcomputer.

13. Electronic equipment comprising:

the microcomputer as defined in claim 8;

a source of input data to be processed by said microcomputer; and

an output device for outputting an analog signal by using the PWM signal generated by said PWM control circuit included in said microcomputer.

14. Electronic equipment comprising:

the microcomputer as defined in claim 9;

a source of input data to be processed by said microcomputer; and

an output device for outputting an analog signal by using the PWM signal generated by said PWM control circuit included in said microcomputer.

15. Electronic equipment comprising:

the microcomputer as defined in claim 10;

a source of input data to be processed by said microcomputer; and

an output device for outputting an analog signal by using the PWM signal generated by said PWM control circuit included in said microcomputer.